St Mary's Farnham Royal Church of England Primary School
We aspire to grow as a community through FAITH as a FAMILY. Thriving for all our FUTURES enabling us to FLOURISH

Progression Map **Subject: Science**

Nursery	Reception
3 and 4-year-olds will be learning to: Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary Explore how things work. Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant and an animal. Begin to understand the need to respect and care for the natural environment and all living things. Explore and talk about different forces they can feel. Talk about the differences between materials and changes they notice.	Children in reception will be learning to: Explore the natural world around them. Describe what they see, hear and feel whilst outside. Recognise some environments that are different from the one in which they live. Understand the effect of changing seasons on the natural world around them. **ELG: The Natural World** **Children at the expected level of development will:** **- Explore the natural world around them, making observations and drawing pictures of animals and plants;** **- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;** **- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.**

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Ideas and evidence:					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Children will discuss what ideas are with teacher and where ideas come from.	Children will discuss and define the term evidence and begin to identify what evidence is and match it to certain ideas. Eg: wood floats Evidence: put some wood in water.	hey recognise why it is important to collect data to answer questions	They recognise why it is important to collect data to answer questions and begin to do so in investigations :	1. Pupils recognise that scientific ideas are based on evidence 2. Pupils describe how experimental evidence and creative thinking have been combined to provide a scientific explanation	1. Pupils recognise that scientific ideas are based on evidence and begin to find evidence to back up their own theories in investigations 2. Pupils describe how experimental evidence and creative thinking have been combined to provide a scientific explanation and investigate specific scientists to model how their theories are backed up with scientific evidence and start to create against existing theories.

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Planning:					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
1. Pupils respond to suggestions about how to find things out and, with help, make their own suggestions about how to collect data to answer questions.and recorded as group work or as photographic evidence 2. They use simple texts, with help, to find information done normally as group work and teacher led learning	1. Pupils respond to suggestions about how to find things out and, with help, make their own suggestions about how to collect data to answer questions and record this in their books as independent work though some photographic and group work may still be evident. 2. They use simple texts, with help, to find information but more independently	1. Pupils respond to suggestions and put forward their own ideas about how to find the answer to a question. 2. They use simple texts to find information. 3. Where appropriate, they carry out a fair test with some help, recognising and explaining why it is fair.	1. Pupils respond to suggestions and put forward their own ideas about how to find the answer to a question and begin to suggest how they can create an investigation to prove their ideas 2. They use simple texts to find information but start to do this Independently 3. Where appropriate, they carry out a fair test with some help, recognising and explaining why it is fair and starting to identify the dependent and independent variables with support.	1. In their own investigative work, they decide on an appropriate approach for example, using a fair test to answer a question. 2. Where appropriate, they describe, or show in the way they perform their task, how to vary one factor while keeping others the same with support 3. Where appropriate, they make predictions. They select information from sources provided for them 4. When they try to answer a scientific question, they identify an appropriate approach. 5. When the investigation involves a fair test, they identify key factors to be considered with support if needed 6. Where appropriate, they make predictions based on their scientific knowledge and understanding.	1. In their own investigative work, they decide on an appropriate approach for example, using a fair test to answer a question and identify how to keep it a fair test 2. Where appropriate, they independently describe, or show in the way they perform their task, how to vary one factor while keeping others the same. 3. Where appropriate, they make predictions. They select information from sources provided for them 4. When they try to answer a scientific question, they identify an appropriate approach and can explain why they have chosen that approach. 5. They select from a range of sources of information. 6. When the investigation involves a fair test, they identify key factors to be considered independently 7. Where appropriate, they make predictions based on their scientific knowledge and understanding and can explain their hypothesis using appropriate scientific vocabulary

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Carrying out investigations					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
1. They use simple equipment provided and make observations related to their task with support 2. They observe and compare objects, living things and events and discuss and record findings as a class.	1. They use simple equipment provided and make observations related to their task and start to do this independently 2. They observe and compare objects, living things and events and can start to question their findings.	1. They make relevant observations and measure quantities, such as length or mass, using a range of simple equipment and record it as a class and some can record data independently	1. They make relevant observations and measure quantities, such as length or mass, using a range of simple equipment. The majority can do this independently with some children needing support.	1. They select suitable equipment and make a series of observations and measurements that are adequate for the task and start to explain why they have chosen certain apparatus 2. They select apparatus for a range of tasks and plan to use it effectively. 3. They make a series of observations, comparisons or measurements with precision appropriate to the task	1. They select suitable equipment and make a series of observations and measurements that are adequate for the task They can explain why the apparatus is the most suitable and plan out how best to use it. 2. They select apparatus for a range of tasks and plan to use it Effectively and explain how they will ensure the apparatus meets the needs for a fair test 3. They make a series of observations, comparisons or measurements with precision appropriate and then can input and record the data accurately.

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Interpreting and evaluating data:					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
They say whether what happened was what they expected	They say whether what happened was what they expected and can start to explain any anomalous findings or unexpected occurrences	1. They provide explanations for observations and for simple patterns in recorded measurements. 2. They suggest improvements in their work.	1. They provide explanations for observations and for simple patterns in recorded measurement and start to link patterns to other scientific ideas. 2. They suggest improvements in their work and explain how they would design their investigation differently if they were to do it again	1. They start to use graphs to point out and interpret patterns in their data. 2. They begin to relate their conclusions to these patterns and to scientific knowledge and understanding. 3. They suggest improvements in their work, giving reasons. 4. They begin to repeat observations and measurements and to offer simple explanations for any differences they encounter. 5. They draw conclusions that are consistent with the evidence and begin to relate these to scientific knowledge and understanding. 6. They make practical suggestions about how their working methods could be improved.	1. They use their graphs to point out and interpret patterns in their data. 2. They relate their conclusions to these patterns and to scientific knowledge and understanding. 3. They suggest improvements in their work, giving reasons. 4. They understand the need to repeat observations and measurements and to offer simple explanations for any differences they encounter. 5. They draw conclusions that are consistent with the evidence and begin to relate these to scientific knowledge and understanding and link their conclusions to other scientific learning 6. They make practical suggestions about how their working methods could be improved and how these changes would improve their investigation.

Progression Map **Subject: Science**

Recording and presenting data:					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
1. Pupils describe or respond appropriately to simple features of objects, living things and events they observe, communicating their findings in simple ways for example, talking about their work, through drawings, simple charts and photographs 2. They describe their observations using scientific vocabulary and record them, using simple tables when appropriate and with support	1. Pupils describe or respond appropriately to simple features of objects, living things and events they observe, communicating their findings in simple ways for example, talking about their work, through drawings, simple charts and some will be able to record findings in writing using appropriate vocabulary 2. They describe their observations using scientific vocabulary and record them, using simple tables when appropriate and some will start to do this independently	1. They record their observations in a variety of ways including photographic evidence, tables and to start to investigate how graphs are used to present evidence 2. They communicate in a scientific way what they have found out.	1. They record their observations in a variety of ways including tables and using tallies and frequency linked to maths learning. The children will start to make graphs to show their data and verbally explain what the graphs show. 2. They communicate in a scientific way what they have found out and use this to start to form scientific conclusions.	1. They record their observations, comparisons and measurements using tables and bar charts and start to suggest the most appropriate graph to record the data in. 2. They begin to plot points to form simple graphs. 3. They begin to communicate their conclusions with appropriate scientific language. 4. They record observations and measurements systematically and, where appropriate, present data as line graphs. 5. They use appropriate scientific language and conventions to communicate quantitative and qualitative data.	1. They record their observations, comparisons and measurements using tables and bar charts and can explain what graph they will use the record the data and why. 2. They begin to plot points to form simple graphs and can explain what the graph shows in their results. 3. They begin to communicate their conclusions with appropriate scientific language and compare their findings to other science learning they have done making connections. 4. They record observations and measurements systematically and, where appropriate, present data as line graphs independently 5. They use appropriate scientific language and conventions to communicate quantitative and qualitative data and explain how this data supports and disproves their hypothesis and why.